

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII • EXAMINATION – WINTER • 2014****Subject Code: 172204****Date: 27-11-2014****Subject Name: Mineral Processing****Time: 10:30 am - 01:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (a) What is grinding? Classify the various zones created in ball mill during grinding. **07**

(b) Define terms like Ore, Mineral, Crushing, locking and unlocking of ore. **07**

Q.2 (a) Give classification of Crushers. Explain any primary crusher in brief. **07**

(b) Explain why flotation is used for fine sized particles. Draw a flotation circuit consisting of rougher cells, cleaner cells and scavenger cell. **07**

OR

(b) What is sizing? Explain sieve analysis in detail. **07**

Q.3 (a) Draw flow sheet for beneficiation of copper ore. **07**

(b) Short note on Heavy media separation. **07**

OR

Q.3 (a) Explain the principle of mechanical classifier. List out the types and explain in brief any one mechanical classifier **07**

(b) Write a short note on thickening. **07**

Q.4 (a) Draw flow sheet of bituminous coal. **07**

(b) Write short note on operation of Jigging machine. **07**

OR

Q.4 (a) Draw flow sheet for concentrating plant for a magnetite ore. **07**

(b) What is the importance of sampling and explain method used in ore dressing. **07**

Q.5 (a) Discuss in brief about Froth flotation **07**

(b) Draw a simplified flow sheet of lead-zinc ore. **07**

OR

Q.5 (a) Explain the mechanism of magnetic separator with neat diagram. **07**

(b) What is the importance of sampling and explain method used in ore dressing. **07**
